

# SUGAR AND PLANTATION NEWS

## LABOR EFFICIENCY AT A MAXIMUM

**Big Paia Mill a Model Where Labor-Saving Machinery Reduces Payrolls**

Labor efficiency, or rather the utilization of labor-saving machinery that reduces the human element to an almost irreducible minimum, has been worked out to the fullest extent in the factory of Maui Agricultural Company at Paia. Visitors to this sugar mill are surprised at the small number of men seen about such a large plant. The various pieces of equipment about the plant appear to have been deserted by the force of employees.

J. P. Foster, superintendent, and J. Meinecke, chief engineer of Paia mill, give constant attention to this factor of labor efficiency, and are always on the alert for new methods by which the dependence on laborers in the mill can be cut further. Results of this system have shown it to be a signal success.

**Results Per Man**  
Expressed in terms of "labor efficiency," these results tell the following story for the grinding season thus far at Paia this year:

The mill has ground 11,350 tons of cane for every day's labor paid for.

The factory has produced 1,350 tons of sugar for every day's labor paid for.

For the 1916 grinding season, the figures were 11,000 tons of cane for every day's labor and 1,500 tons of sugar for every day's labor.

Following are illustrations of how few men are needed at Paia mill each twelve-hour shift:

Four men attend to all the cane unloading, one on the weighing and three handling the unloading machinery, doing the work by means of automatic apparatus that it formerly took seven men to do.

Six men operate the eighteen roller mill.

There are four men in the boiler room, three firemen and one water tender.

One man attends to the lining of the juice and the clarification system.

Three men attend to the evaporation and the graining.

Four men are sufficient to do the filling, weighing, sewing and piling of the bags of raw sugar.

**Automatic Unloaders**  
At the commencement of operations where the cane enters the mill, the system is most improved by the amount of labor done by a minimum of men.

Here the automatic apparatus leaves little else to the laborers than the working of levers and the release of coupling pins and bolts. With this man watching the scales, the three on the unloading equipment are easily able to keep a continuous stream of cane on the carrier feeding the big eighteen roller mill.

The ordinary system of drawing the cane forward by cable is used, but in addition brakes measured to catch the various sizes of cars are set in the ground. These automatically catch the car and hold it in the required position for the Wicks unloaders as the car moves forward.

Then without further attention machinery moves the empty cars forward, slides it onto a movable track that automatically carries it aside and shunt it back onto another track.

**Four Men To A Floor**  
Another striking illustration of the system of labor efficiency is on the floor where is situated the clarification system. In charge of the four men on this floor is lifting equipment, the six tanks of the continuous settling system, five juice heaters, and the quadruple effect evaporators.

Automatic steam pressure gauges control the four evaporators. A quarter horse power motor operates the air compressor. The temperature control of the juice heaters is also handled automatically.

Three of the four men on this floor are in charge of the evaporating and graining.

On the floor below is a set of six glass tubes leading from the six tanks of the continuous settlers through which is kept a constant flow of juice. These small tubes serve as sample gauges. They are so placed as to be in a position just which the superintendent, the manager, the chemist or any of the managerial staff walk a dozen or more times a day. Thus by just a casual glance a check is kept on the work of the clarification system throughout the entire day.

**TRASH PLOUGHED UNDER ON WAILUKU FIELDS**

Large areas of Wailuku plantation are still cultivated and harvested with the trash left on the fields. This experimental work carried on by Manager Penhallow is probably as extensive on Wailuku plantation as on any other irrigated plantation in the islands. During 1915 and 1916 the area of the fields on which the trash was left totaled 4,800 acres and this year the trash is being left on more than 1,000 acres.

Manager Penhallow believes that the expense of handling the fields with or without trash is about the same, although the harvesting of a field on which the trash is to be left is more expensive than on burned-off fields.

The method that has been found best practice on Wailuku is to pull the trash alongside the cane and hill up on it.

## AMPLE TONNAGE FOR SUGAR SHIPMENTS

**Authority Sees No Chance For Any Curtailment of Mainland Imports From War**

Sugar trade circles have been largely interested in the past three weeks both from a theoretical and practical standpoint in the overseas shipping situation, says Facts About Sugar. The entrance of the United States on the side of the Entente Allies has intensified the situation to a degree that has called for careful analysis of both present and future prospects relative to the movement of a tonnage equal to three-quarters of the total annual sugar supply received normally in this country.

**Dispute Alarmist Reports**  
Commenting on this first phase of the situation, namely the immediate prospects, a prominent steamship man engaged in the movement of sugar shipments to the United States has made the following statement to Facts About Sugar:

"It is natural in view of the wide publicity given to overseas shipping conditions as now existing that sugar producers in Cuba, Hawaii, Porto Rico, the Philippines and as well as all producing countries in the Western Hemisphere are more or less disturbed over the alarmist reports that have been circulated relative to the immediate movement of their sugar crops."

"They and the sugar trade of the United States are unquestionably entitled to a complete knowledge of the facts. There is no possibility of any curtailment of shipments of sugar from any of these geographical points that I have mentioned occurring in the immediate future. In the case of Cuba practically one-half of the crop has already been moved and there is available tonnage in sight to move all the balance of the crop. While prevailing freight rates which are now quoted at fifty-five cents for the north side and seventy-five cents for the south side are unquestionably high in view of the fact that in addition high war insurance rates are assessed thereto, it must also be taken into consideration that they are at far lower levels than are prevailing for the movement of other commodities to this and other countries and in themselves cannot be rated as detrimental to the interests of American consumers and the American sugar trade."

**Sufficient Tonnage Available**  
As I have previously stated there is unquestionably sufficient tonnage available and in sight to care for the movement of the balance of the Cuban crop at comparatively low rates for several months to come. What the future may bring forth in so far as the fall of 1917 and early 1918 may be concerned I can only say that I have every belief that this government, working through the agencies of the Shipping Board and the Council of National Defense, will provide adequately for the free movement of the next Cuban crop to this country and from other West Indian points."

"The Porto Rican situation presents some present difficulties, inasmuch as one local steamship company operating to the island has canceled its contracts with the planters and sugar stocks are piling up there to a larger degree than is consistent with the sugar needs of the American market. This condition, however, will be remedied in a short time by the newly created committee on shipping appointed by the Council of National Defense, on April 21, of which Chairman Demarest of the Federal Shipping Board is the head."

"On this committee are also Frank C. Munson of the Munson Steamship Line, and M. Hull, of A. H. Hull and Company. Both of these steamship men are concerned largely in their shipping interests with the movement of sugar from Porto Rico, Cuba, and the West Indies to the United States, and I believe that they will promptly solve the Porto Rican sugar producers' problem. In this connection I also believe that this committee will use every effort to safeguard the prompt movement of all sugar shipments to this country from Western Hemisphere points, and I see no reason for the American sugar trade feeling any alarm over future happenings even if they may represent grave military and naval developments."

"Concerning sugar shipments overland from the Hawaiian and Philippine Islands I feel free to say that there is very little likelihood of any serious trouble being experienced in that quarter. There will be ample tonnage available in the Pacific Ocean for several years to come adequately to handle supplies from these two sources I have mentioned."

**CUBANS RUN TRACTORS WITH ALCOHOL FUEL**

The theory advanced by many experts that alcohol will be the motor fuel of the future is supported by a statement recently made by an official of a large tractor corporation.

He told the Mid-West section of the Society of Automobile Engineers that until war conditions made it impossible for his company's tractors in Cuba were operating on alcohol which was made by the individual sugar planters from their refuse at a cost of approximately eight cents per gallon as compared with something like ten times that cost for gasoline; that no changes were necessary in the engine except the increase of compression to about ninety-five pounds per square inch and

## DIRECT TAX ON ALL CUBAN SUGAR

**War Necessities Call For Small Export Charge Amounting To Eighty Cents a Ton**

SANTIAGO DE LAS VEGAS, April 26.—Several mills in Camaguey and Oriente, located along the railroad connecting Santa Clara and Santiago de Cuba, are said to be seizing the end of their grinding season and facing large output reductions from earlier estimates. There was no damage done to the machinery of these mills, according to the reports received here, and the losses sustained by these centrals have been confined to the fields, stores, railroads and dwellings.

President Menocal has just signed a governmental decree advancing \$1,000,000 to the Cuba Railway from the Cuban treasury for the purpose of enabling the company to commence the repairs on its track and rolling stock which are made necessary by the damage inflicted during the recent revolution. The government recognizes that it will eventually have to pay for the damages this railroad has sustained and the loan is really an advance payment on account of the indemnity that will undoubtedly be awarded later on.

**Repairs to Be Rushed**  
These repairs are to be made as fast as possible in order that the government may be able shortly to move its troops and supplies through the eastern provinces should military developments require such action. It is also foreseen that the United States may need adequate transportation facilities in Cuba in connection with moving supplies to its naval station at Guantanamo.

The operations of the rebels at present seem to be largely confined to the province of Camaguey. Semi-official information obtainable indicates that there are still eight bands of rebels in the field in that section. Only two of these bands have any great following. Further information from the same source is to the effect that the government is concentrating large bodies of troops for the purpose of pushing an aggressive pursuit of these few remaining guerrilla bodies and thereby putting an end to the last remaining sparks of the revolution.

**Many Grave Problems Ahead**  
The interest in the revolution and the steps taken to crush it which has been so acute during the past two months is giving place to perhaps a greater interest in the readjustment of national economic policies made necessary by the entry of Cuba into the war. Many grave problems confront the Cuban congress which is now in session, and the country is anxiously awaiting their being solved.

President Menocal has presented a special message to that body covering many of these problems. The greatest interest locally centers in his recommendation relating to the authorizing of a \$30,000,000 bond issue first, for the purpose of paying the indemnities arising from the recent internal disturbances, and secondly to enable the government to perform satisfactorily its larger duties as an ally of the United States and the European Entente.

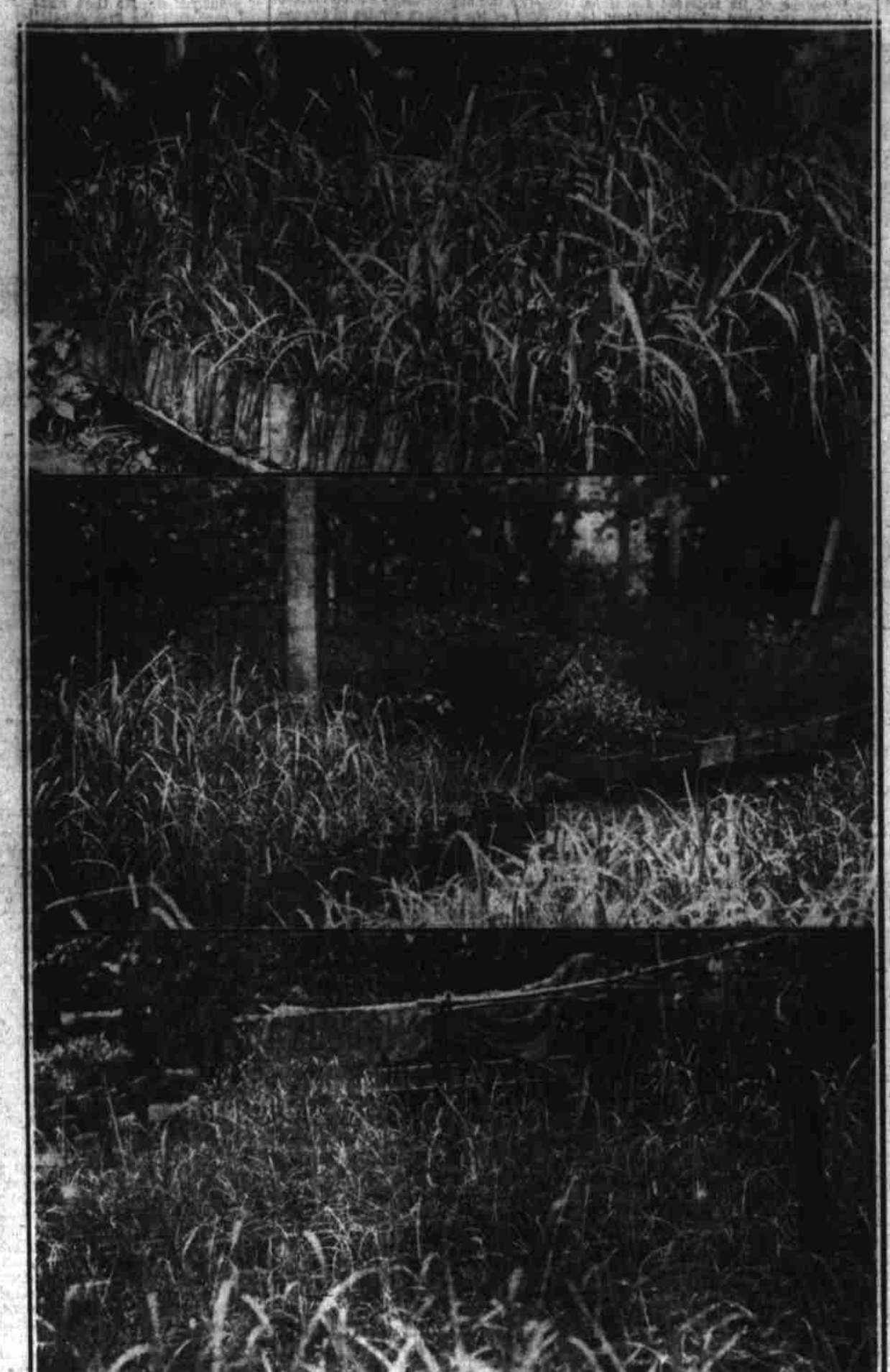
The president in his message says: "Cuba is no lukewarm ally which rejects sacrifices and begrudges efforts to aid the common cause, but proposes to do her duty in any circumstances that may arise."

**Many New Taxes Planned**  
He recommends the immediate use of bonds to the extent of thirty million dollars, bearing interest not to exceed six per cent, amortization of which should begin immediately after the conclusion of the European war. To provide for the payment of the interest on this bond issue and later the amortization of the debt, he recommends many new taxes, such as a stamp tax on all stock exchange certificates, on all receipts, commercial paper, rentage, contracts, insurance policies and all public documents of the Government. To provide for the payment of the interest on this bond issue and later the amortization of the debt, he recommends many new taxes, such as a stamp tax on all stock exchange certificates, on all receipts, commercial paper, rentage, contracts, insurance policies and all public documents of the Government.

Several attempts have been made in recent years to place a direct tax on sugar, but the sugar planters have always fought the proposition on the ground that it would be a discriminatory tax and that any successful attempt of this kind, even though very innocent looking and harmless at first, would eventually lead to abuse. The planters have also always claimed that they already bear in a substantial measure their proportion of the taxes necessary to support the government and that new sources of revenue should be sought from other interests. Special circumstances, however, call for special action, and in national emergencies generally bring about a right about face in opinion held, so that no objections to the tax on the part of the sugar interests have been reported so far.

**Food Control Board Appointed**  
Another legislative measure recently adopted shows that the Cuban government has not entered the war in any lightness of manner or without a proper consideration of its consequences. A national board of food control has been appointed, which will regulate both the supply and sale of all foods, whether produced in the country or imported from abroad. To that end a government of decree has been promulgated establishing a maximum price on certain of the most important foodstuffs, and it is understood that practically all foods will be controlled in this manner.

SOME of the extensive cane seedling beds being cultivated at the nursery on the Wailuku Sugar Company's land, where the Hawaiian sugar planters' experiment station is carrying on exhaustive work in the development of Hawaiian seedlings. The upper photograph shows a corner of the nursery and a fine crop of young Lahaina cane plants, started last December. The middle photograph shows a part of the forest nursery for the propagation of trees, which is also carried on, and the lower photograph gives a general view of the cane seedlings, showing the large number that have been propagated and their healthy growth.



## Securing New Seed Cane a Devious Task Extensive Work In Progress At Wailuku

Extensive work is being carried on this season by the staff of the sugar planters' experiment station in the propagation of cane seedlings. One of the largest of this series of experiments is located at Wailuku Sugar Company, where some 15,000 seedlings have been planted.

Here H. B. Penhallow, manager of the plantation, is continuing the forest nursery which has been carefully developed for the last ten years. During this period that the forest nursery has been in operation, nearly 150,000 trees have been planted on the lands of the plantation, all of the young trees having been grown at the nursery.

Planting and patient work is required in the propagation of the cane seedlings and each step in the work is given definite care and watching to secure satisfactory results.

**Collecting the Seed**  
Cane tassels are picked about a month after they open—when the tassels are full, ripe and starting to blow. The tassels are placed in cloth bags and hung up to dry for a few days. Each bag is marked showing the variety, plantation, lot number, date picked, kind of weather and the variety of cane in adjoining fields. Though the tassels can be left in the bag for several weeks it is better to do the planting as soon as possible after they have dried.

When ready for planting, the fuzz, containing the seed, is pulled from the tassels and spread to a depth of a quarter of an inch or less, over the surface of a rich mixture of soil about two inches deep in a small wooden tray. The blanket of fuzz is carefully pressed down to the soil and sprinkled with water and painted glass or a cloth frame is set up over the boxes to retain moisture and partly shut off the light.

**Care and Attention**  
The work is now one of constant care and attention with several transplantings and if out of 15,000 seedlings grown in a season, the cultivator secures two or three good canes, he may consider himself in luck.

The boxes in which the fuzz is planted are marked for identification and record with the date of planting, the variety planted, the kind of soil, etc. There is no set rule as to the mixture of soil though it is recommended that, if possible, all soil for seedling boxes should be sterilized. This tends to prevent damping off and prevents growth of weeds in seed boxes. Sterilization, however, is not absolutely necessary.

**Testing Various Soils**  
All kinds of rich mixtures of soil are being tried by the experiment station staff in this seedling propagation work. The soil used may be ordinary field soil, or rich soil mixed with coral sand and if possible with vegetable mould. A favorable soil mixture consists of one-half ordinary soil, one-quarter coral sand and one-quarter vegetable mould.

Under the canvas cover, the young plants, which begin to appear in about ten days, require being kept moist. At

## SUGAR MARKET MARKING TIME

**New York Buyer's Waiting To See What Events Will Bring Forth Before Venturing**

Nothing of particular bearing on the market has developed during this week, reports the New York correspondent of a local sugar house, under date of May 4. Refiners have done nearly all the buying that has been reported, and prices have ranged from 5.14c to 5.14c C. & F. for Cubas, while Porto Rico has fluctuated between 6.08c and 6.31c C. I. F. A sale today of Cuban to the American for their Philadelphia refinery was made at 5.14c C. & F. for 6500 bags, but an unsold cargo of Porto Rico is nearby and its sale being urgent a price of 6.08c C. I. F. is thought possible. These periodic sales of "distressed" sugars are inevitable so long as Porto Rican sugars continue to be shipped here unsold, and especially so now that storage facilities are at a premium and demurrage rates sky high. There is not much Cuban sugar offering and, as a rule, the asking price is 5.35c C. & F., while refiners and operators appear to be willing to buy at 5.14c. The British commission is said to be still buying in a small way for June shipment at 4.75c to 4.80c F. O. B., but their wants for the present appear to be supplied. The probabilities are that purchases for that account will be very moderate, for the all important question of tonnage grows from day to day. With regard to the taxation for war purposes, it seems to be generally agreed that, for the time being at least, sugar will be left out of consideration.

**Cuban Weather Good**  
For the past week the weather in Cuba has been very favorable for harvesting and the output is said to be satisfactory both as to tonnage and percentage of sucrose.

Figures for last week follow—six ports only:

	Himely	Cuma
Receipts	99,500	92,954
Exports	64,500	63,470
Stocks	576,000	563,239
Exports north of Havana	22,500	28,309
Exports to New Orleans	25,000	18,003
Exports to Europe	17,000	17,158

It is well to note that visible production in Cuba to 28th April is 2,039,055 tons against 2,356,292 tons last year and 1,780,797 tons in 1915. It remains to be seen whether there is cane enough in the fields to enable the factories to duplicate last year's output provided the weather continues favorable. We are quite skeptical on this point, because, as we have already indicated, we believe the cane is much inferior in sucrose, and besides the months of highest sucrose content are past.

Since the foregoing was written the Americans have taken 30,000 bags Porto Rico which have been on offer since yesterday at 6.14c C. I. F., which appears to have cleared up the market as nothing else is now known to be pressing.

Refined sugar has been in moderate demand all of this week. The American are still quoting 7.50c basis and taking as British business as they can help. Howell is quoting but selling in a very limited way at 8c basis, while all the others are out of the market with their ideas for a basis around 8.12c to 8.34c.

**DROUGHT WORRYING HAMAKUA PLANTERS**

Lack of rain is bothering the plantations along the Hamakua coast and interfering with the growth of the 1918 crop. Up to the second week in May, the dry spell had lasted a month, making it the driest spell for that period since 1897.

However, the crops look good, though the young cane is liable to receive a setback.

Kohala district plantations are also experiencing difficulty for lack of sufficient water, though the drought there is not so severe.

Both the Hamakua and the Kohala ditches are running much less than capacity.

**JAMAICAN GOVERNMENT URGES SUGAR PLANTING**

KINGSTON, Jamaica, April 25.—The government has decided upon an extensive scheme of sugar development, in which the administration will be pledged for raising capital to establish central factories in Jamaica. The profits of the venture are to be shared by the government and the cane farmers. Jamaica believes that imperial preference will be Britain's future policy.

enough to make cuttings, they are transplanted again in this manner so that a large enough field area can be secured to get a unit area for a juice sample. And it is only when this unit area is harvested and a juice sample is secured, that the results of all the careful work are known.